

## AXIAL THRUST BALANCING SYSTEM FOR A CENTRIFUGAL COMPRESSOR, HAVING IMPROVED SAFETY CHARACTERISTICS

### ABSTRACT

An axial thrust balancing system (10) for a centrifugal compressor (12), having improved safety characteristics, the centrifugal compressor (12) comprising a rotor (14) having impellers (16) adjacent to each other and connected by a shaft (18), the rotor (14) rotating in a stator (20), the centrifugal compressor (12) additionally including a balancing piston (22), a balancing line (24) being provided between an intake of a first compression stage and an area downstream of the balancing piston (22); this system (10) comprises an intake mechanical gas seal (26) around the shaft (18) upstream of the first compression stage and an outlet mechanical gas seal (28) downstream of the balancing piston (22), the balancing line (24) being closable by means of blocking elements (32).